

DUMBARTON OAKS AMERICAN BEECH GROVE
(Dumbarton Oaks *Fagus grandiflora*)
NPS Witness Tree Protection Program
Rock Creek Park
Dumbarton Oaks Park
1703 32nd Street, NW
Near Lover's Lane entrance
Washington
District of Columbia

HALS DC-13
DC-13

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN LANDSCAPES SURVEY
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

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DUMBARTON OAKS AMERICAN BEECH GROVE

(Dumbarton Oaks *Fagus grandifolia*)

HALS No. DC-13

<u>Location:</u>	Rock Creek Park, Dumbarton Oaks Park, 1703 32nd Street, NW, near Lover's Lane entrance, Washington, District of Columbia
<u>Owner/Manager:</u>	U.S. Government, National Park Service
<u>Present Use:</u>	Ornamental and shade trees; prominent landscape element
<u>Significance:</u>	The trees of the Dumbarton Oaks American Beech Grove (<i>Fagus grandifolia</i>) are significant because of their longevity and association with Beatrix Jones Farrand, who preserved and incorporated the grove into her design for Dumbarton Oaks Park.
<u>Author & Discipline:</u>	Jonathan Pliska, Landscape Architectural Historian, 2006
<u>Project Information:</u>	The Witness Tree Protection Program was a pilot project undertaken by the Historic American Landscapes Survey and the National Capital Region of the National Park Service. The principals involved were Richard O'Connor, Chief, Heritage Documentation Programs; Paul D. Dolinsky, Chief, Historic American Landscapes Survey; Darwina Neal, Chief, Cultural Resources, National Capital Region; Jonathan Pliska, Historian, Historic American Landscapes Survey; Jet Lowe and James Rosenthal, Photographers, Heritage Documentation Programs.

PART I. HISTORICAL INFORMATION:

In 1940, Robert and Mildred Barnes Bliss, the last private owners of the Dumbarton Oaks estate, donated the nineteenth-century Federal-style mansion and formal upper gardens to Harvard University, and the naturalistic lower gardens to the National Park Service. From 1922-47, noted landscape architect Beatrix Jones Farrand designed both the upper and lower gardens, with the latter also known as Dumbarton Oaks Park. However, by the early 1970s changes in NPS management philosophy and jurisdictional boundaries had begun to negatively impact Farrand's naturalistic setting at Dumbarton Oaks Park. According to the site's cultural landscape report, "invasive vegetation grew unchecked, running rampant into the woodland and open meadows; structural features deteriorated due to lack of routine maintenance; and the NPS de-emphasized the interpretation of the

garden to the public.”¹ Much more attention was paid to the formal upper gardens, and it was not until 1983 that the historic design significance of Dumbarton Oaks Park was fully realized, by which time considerable damage had already occurred. Starting in the late 1980s, the NPS began to reinvest in Dumbarton Oaks Park through a focus on historical research, site documentation, analysis, evaluation, and recommendations.

Dumbarton Oaks Park is a twenty-seven acre naturalistic setting supplemented by Farrand’s landscape treatments. Unlike her formal design of the manicured upper gardens, Farrand focused on the enhancement of the natural conditions already present in the park. Her alterations and additions are consciously understated, designed to blend with and complement the existing topography and vegetation. Overall, Dumbarton Oaks Park contains a variety of key landscape features, including pools, paths, waterfalls, tree, shrub and flower plantings, as well as the remnants of the historic oak woodlands after which the estate is named. As with these oaks, Farrand retained and enhanced an existing grove of American beech (*Fagus grandifolia*) trees, which likely dates to at least the early nineteenth century. Today the grove ranks amongst the most celebrated components of her entire design scheme.

Beatrix Jones Farrand (1872-1959) is commonly considered the finest female landscape architect of her generation.² Her interest in landscape architecture began early in life, when at the age of 11 she contributed to the design of the gardens at Reef Point, her parents’ estate in Bar Harbor, Maine. Throughout her childhood, she was also influenced by her aunt, the novelist Edith Wharton, who was also held an avid interest in classical design.³ At age twenty, Farrand became a student of Charles Sprague Sargent, professor of horticulture at Harvard and founder and director of the university’s Arnold Arboretum. In the spring of 1895, Farrand traveled to Europe where she toured more than twenty gardens and villas in France, England, Italy, and several other countries. Chinese landscape traditions and professional associations with Frederick Law Olmstead, Sr., Gertrude Jekyll, and William Robinson also inspired her growth and development. From Jekyll and Robinson, both acclaimed nature writers, Farrand gained an appreciation for the “wild garden fashion,” as well as the importance of nature in design, the landscape value of native plant species, and the use of warm, stimulating colors in her work.⁴ Each of these facets is showcased throughout Dumbarton Oaks Park, particularly within the American beech grove. Although respected during her lifetime, and the only woman among the eleven founders of the American Society of Landscape Architects, Farrand’s achievements were not generally realized until after her death. Throughout her life she refused the title landscape architect, preferring to be known as a landscape gardener,

¹ Maureen De Lay Joseph, Kay Fanning, and Mark Davison, *Cultural Landscape Report: Dumbarton Oaks Park, Rock Creek Park – Part I: Site History, Existing Conditions, and Analysis and Evaluation* (Washington, D.C.: U.S. Dept. of the Interior, National Park Service, National Capital Region, Cultural Landscape Program, 2000), vii.

² Robert W. Patterson, “Beatrix Farrand, 1872-1959; An Appreciation of a Great Landscape Gardener,” *Landscape Architecture* (Summer 1959): 216-218, quoted in Joseph et al., 75.

³ Joseph et al., 75.

⁴ Ibid., 78.

noting that, “Landscape gardening is the profession of a painter on the substance of an engineer.”⁵ Her gardens at Dumbarton Oaks are widely considered the pinnacle of Farrand’s career, coupling naturalistic design and neo-classical American landscape architecture.

The Dumbarton Oaks American Beech Grove is located just inside the main entrance to Dumbarton Oaks Park. As such, the approximately one dozen beech trees occupy a prominent place on the landscape. Moreover, the grove acts as a microcosm of Farrand’s design style, and her overall development of Dumbarton Oaks Park. Each of Farrand’s seven key design elements is present within the grove: spatial organization, circulation, scale, topography, water features, vegetation, and color.⁶ Spatial organization and circulation are intimately related. As stated in the cultural landscape report, “The experience of moving along the circular walk through a series of spaces, which move gradually from formal garden areas out into a picturesque ‘wilderness,’ appears to be the underlying motive of the entire Dumbarton Oaks garden landscape.”⁷ The beech grove is the first of these spaces, as visitors wind their way through a series of paths that take them through the naturalistic gardens of Dumbarton Oaks Park, the formal gardens, and finally up to the mansion itself. Farrand succeeded in creating the illusion that the Dumbarton Oaks property is larger than its actual size, while simultaneously treating visitors to small-scale, localized scenes. Upon entering the beech grove, one is effectively isolated from the remainder of the grounds. Turns in the path prevent visitors from seeing too far ahead, and in Farrand’s time, mountain laurel (*Kalmia latifolia*) grew beneath the beech tree canopy, creating a further sense of seclusion and enclosure.⁸ Continuing on a short while affords a magnificent view of the mansion and formal gardens above, and the scene is equally impressive looking down from the house toward Dumbarton Oaks Park. The path itself follows the land’s natural topography. As Farrand wrote, “The whole scheme for the north slope of the property should be properly studied from the ground itself rather than from any plan.”⁹ Furthermore, she may have designed the water channel, which seems to anticipate some of the major water features present on the site.¹⁰ Perhaps most strikingly, she supplemented the existing vegetation with a combination of trees, shrubs, vines, herbaceous perennials, and bulbs to create a vivid color scheme. Although the irises that Farrand planted at the beech grove quickly died out because of iris rot and borer infestation, her understanding of the scene’s palette is highlighted by the detailed instructions she left for replacement plantings, particularly in regard to the overall color scheme. She directed that replacement plantings should be “pale yellows, the whites and the lavenders with one or two of the dark purples and deep-maroon reds.

⁵ Beatrix Farrand, article on landscape gardening for women for book on vocations, undated typescript in the Documents Collection, College of Environmental Design, University of California at Berkeley, quoted in Joseph et al., 75.

⁶ Joseph et al., 82-88.

⁷ Ibid., 83.

⁸ Ibid., 136.

⁹ Ibid., 85.

¹⁰ Ibid.

The golden yellows and the pinks were avoided, as they did not seem in happy combination with the Cherry flowers.”¹¹

Today the Dumbarton Oaks American Beech Grove retains much of the vegetation and significant color combinations of the Farrand period. In addition to the beeches themselves, contributing species include wild crabapple (*Malus sp.*), black walnut (*Juglans nigra*), spicebrush (*Lindera benzoin*), Japanese honeysuckle (*Lonicera japonica*), Virginia bluebells (*Mertensia virginica*), Star of Bethlehem (*Ornithogalum umbellatum*), and daffodil (*Narcissus sp.*) to name only a few. Unfortunately, non-contributing invasive species have also become established within the beech grove. Examples include several species of maple trees (*Acer sp.*), burning bush (*Euonymus alatus*), poison ivy (*Rhus radicans*), and garlic mustard (*Alliaria petiolata*).¹² The presence of garlic mustard is of special concern as it rapidly spreads and displaces native species, and once established is extremely difficult to remove or control.

Beatrix Jones Farrand’s incorporation of this American beech grove into her overall design for Dumbarton Oaks is as unique as it is charming. The native trees blend so harmoniously with their planned surroundings that they seemingly appear in a wilderness context, though Farrand planned most every aspect of their setting. That she went out of her way to preserve the grove is even more noteworthy given the species’ relative disuse. Horticulturist Michael Dirr goes so far as to say that “the boat has been missed as far as the use of this tree in the landscape.”¹³ The Dumbarton Oaks American Beech Grove stands as a clear exception to this generalization, as it occupies a prominent place in a major design by one of the most outstanding landscape architects of the early twentieth century.

PART II. BIOLOGICAL INFORMATION

Commonly known as American beech, *Fagus grandifolia* is one of ten species classified under the genus *Fagus* within the beech family Fagaceae.¹⁴ Trees present a robust and striking appearance, created by a wide branching habit comprised of many horizontal branches. Said to cover the “trunk and branches like a skin,” the silvery gray bark is smooth and tight fitting. Mottled with dark, irregular bands and blotches, the bark’s unique coloration and pattern allows American beech to be identified at a distance.¹⁵ Upon closer inspection the species is found to bear glossy, serrated, ovate-oblong leaves.

¹¹ Beatrix Farrand, *Beatrix Farrand’s Plant Book for Dumbarton Oaks*, ed. Diane K. McGuire (Washington, D.C.: Trustees of Harvard University, Dumbarton Oaks Research Library and Collection, 1980), 94, quoted in Joseph et al., 136.

¹² Joseph et al., 140-141.

¹³ Michael A. Dirr, *Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses*, 5th ed. (Champaign, Ill.: Stipes Publishing L.L.C., 1998), 370.

¹⁴ Liberty Hyde Bailey and Ethyl Hyde Bailey, “*Fagus*,” in *Hortus Third: A Concise Dictionary of Plants Cultivated in the United States and Canada*, revised and expanded by the staff of the Liberty Hyde Bailey Hortorium, Cornell University (New York: Macmillan Publishing Co., Inc., 1976), 470.

¹⁵ G. H. Collingwood and Warren D. Brush, *Knowing Your Trees*, ed. Devereux Butcher (Washington, D.C.: The American Forestry Association, 1964), 185.

Dark green above and light green below, they are arranged alternately on branches and measure 2" to 5" long x $\frac{3}{4}$ " to 2 $\frac{1}{2}$ " wide. Parallel veins diverge from both sides of a central vein, or midrib, with each terminating at a pointed tooth along the perimeter. Being deciduous, they turn a showy golden bronze in the autumn. Leaves may persist into the winter, but the silvery bark and heavily branched skeleton assure that American beech remains prominent in the landscape after they finally fall to the ground.¹⁶

In April or May the leaves reemerge accompanied by flower blooms. The flowers are monoecious, meaning both male (staminate) and female (pistillate) forms appear on the same tree. Staminate flowers appear as round (globulose) heads measuring 1" in diameter and hang from stems of about the same length. Pistillates are arranged as aggregates of two to four flowered spikes. Both sexes are an inconspicuous yellow or yellow-green color. Following fertilization, the pistillate flowers produce brown, three-winged nuts. Solitary or occurring in groups of two or three, the nuts are triangular in shape and wholly or partially enclosed by a prickly pouch (involucre) measuring about $\frac{3}{4}$ " long.¹⁷ American beech begins producing appreciable quantities of nuts at age forty, increasing production during physiological maturation. Large annual yields are attained by age sixty. Dispersal distance is severely limited due to the size of the nut, although some may roll down inclines, be carried short distances by rodents, or several miles by birds, blue jays in particular. Because of this short range, young saplings commonly ring older trees.¹⁸

Fagus grandifolia is a moderately slow growing and long-lived species. Trees grow in height at a maximum rate of 2' per year. Typical trees reach heights of 50' to 70', although some outstanding individual specimens may grow as tall as 120'. Crown spread is usually less than or equal to tree height, and only the largest attain trunk circumferences greater than 150" or 4' diameter at breast height.¹⁹ American beech continues growing throughout its life, and the largest trees are also the most venerable, often 300-400 years old.²⁰ Unfortunately, because the Dumbarton Oaks Grove is a naturally occurring remnant of what was historically a forested area, the precise age of the trees is unknown. However, at a minimum the largest trees date to the early twentieth century, and most likely to the 1800s. The trees have also not been measured.

¹⁶ Dirr, 369.

¹⁷ Ibid.; Collingwood and Brush, 184-85.

¹⁸ Carl H. Tubs and David R. Houston, "American Beech," in *Silvics of North America: 1. Conifers. Agricultural Handbook 654*, online ed., tech. coords. Russell M. Burns and Barbara H. Honkala (Washington, D.C.: U.S. Department of Agriculture, U.S. Forest Service, 1990), 656, http://www.na.fs.fed.us/spfo/pubs/silvics_manual/volume_2/silvics_v2.pdf (accessed 13 June 2006); John R. Seiler, Edward C. Jensen, or John A. Peterson, "American Beech," in *VTree ID* (Blacksburg, Va.: Virginia Tech Forestry Dept., 2006), <http://www.cnr.vt.edu/dendro/dendrology/syllabus/factsheet.cfm?ID=47> (accessed 19 June 2006).

¹⁹ Collingwood and Brush, 184; Dirr 369; Jeffery L. Reimer and Walter Mark, *SelectTree: A Tree Selection Guide* (San Luis Obispo, Calif.: Urban Forest Ecosystems Institute, 2004), California Polytechnic State University, <http://selecttree.calpoly.edu> (accessed 21 June 2006).

²⁰ Tubs and Houston, 653.

Although drought tolerant, American beech is a mesophytic species, adapted for optimal growth in a moderately moist environment.²¹ It prefers deep, rich, well-drained soils and grows best when the upper levels retain moisture.²² The trees are suited to coarse-textured, sandy soils and silty medium-textured soils, but not the clay composition of fine-grained soils. With a soil pH range of 4.1-7.2, *Fagus grandifolia* shows a strong affinity for acidic conditions, and may suffer from iron chlorosis in a more alkaline environment.²³ This iron deficiency is not usually caused by a lack of available iron, but high soil pH, which causes other elements to interfere with iron absorption. Iron chlorosis is characterized by diminished chlorophyll production, stunted growth, withered leaves, decreases flower blooms and fruiting, and may cause death in severe cases.²⁴ The species also suffers from attacks by various diseases and insects, including leaf mottle, beech bark disease, cankers, aphids, wood borers, beech scale, beech mealybug, and caterpillars. Although these pests may cause discoloration or partial dieback among trees, they are not particularly serious and can be treated with pesticide application in most cases.²⁵ The trees of the Dumbarton Oaks American Beech Grove appear to be in general good health. The lowest branches of the largest specimen have been pruned so as not to inhibit pedestrian traffic. Its lower trunk is also covered with carvings, added by visitors over the years. This damage is superficial, and has not impacted the tree's health.

²¹ Ibid., 654.

²² Collingwood and Brush, 184.

²³ "Conservation Plant Characteristics for: *Fagus grandifolia*, American Beech," in *PLANTS Database* (Baton Rouge: U.S. Department of Agriculture, U.S. Forest Service, National Plant Data Center, 2007), http://plants.nrcs.usda.gov/cgi_bin/topics.cgi?earl=plant_attribute.cgi&symbol=FAGR (accessed 12 December 2007).

²⁴ Edward F. Gilman and Dennis G. Watson, *Fagus grandifolia: American Beech*, (Gainesville, Fla.: University of Florida, Institute of Food and Agricultural Sciences, November 1993), <http://edis.ifas.ufl.edu/ST243> (accessed 12 June 2006); Elton M. Smith, "Iron Chlorosis," in *Ohio State University Extension Fact Sheet*, (Columbus: Ohio State University Extension, 2006), <http://ohioline.osu.edu/hyg-fact/1000/1009.html> (accessed 7 September 2006).

²⁵ Collingwood and Brush, 185.